WITH THE TWENTIETH CENTURY WONDER WORKERS

What Science Says About Cows' Milk Why It Is So Necessary; How It Is Is Is So Necessary; How It Is Is Is Is Is It Is Is Is It Is Is Is It Is Is Is It Is Is It Is Is It Is Is It Is

mittee of England, which is especially real value. apply to the health of the public.

milk did not begin in a scientific way until almost the twentieth century. In 1900 Prof. Escherich of Vienna sought to account for the difference in progres made by infants fed on boiled cow's milk as compared with that made by babies naturally nourished by their mothers. He suggested that milk centained certain properties which were destroyed by boiling and which might be of value to the infant.

The discovery in milk of a considerable number of ferments has led many to describe milk as a living substance and to credit milk with powers which investigation has not substantiated. It should be remembered that milk is a secretion of the mammary gland and its production is on lines comparable the secretion of saliva of the salvary glands.

As digestion is brought about by the action of certain ferments, so we find ferments in all parts of the body. So far as is known each ferment performs one action and one action only; that is to say it is adapted for working upon and effecting an alteration in one parucular chemical substance only. A ferment which will attack a fatty substance has no effect upon a substance belonging to the class of starches or sugars. So we need a large number of

Ferments are produced by animal cells and by bacteria. They are present in every cell of the mammary gland. It is known that these cells break down and disinterrate in the course of milking and of milk production since portions of cells can always be found, together with intact cells, in the sediment from any sample of milk. In addition the blood and lymph carsecretory glands traces of substances

from the gland itself ferments are in cow's milk.

The experimenters have found seven ties are avoided. ar of from the cow herself or from the digestive process.

The scientific study of milk has considerable are capable of producing different are capable of producing different participation of formeris in considerable and considerable are capable of producing different participations of ferments in considerable to determine presents are capable to determine presents and death.

The scientific study of milk has considerable and fine the satisfactory results obtained in France and England point to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development to a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development, in the same rhythm and the chimpanate to a probable further development. It is a probable further development to a probable further development to a probable further development. It is a probable further development to a probable further development to a probable further development. It is a probable further development to a probable further development to a probable further development. It is a probable further development to a probable further development to a probable further development. It is a probable further development to a probable furthe

has been taken by the infant or they ity of that gland, but if there is an un- had the milk not been heated.

those who, like the people of may conceivably act as subsidiary that there are three main classes of New York city, have been fac- agents in connecti n with the digesing a milk problem any new tive processes, although not themight upon the value of milk will be stances in the milk which are to be welcome. The Medical Research Com- digested by these ferments make its

mittee of England, which is especially concerned with national health insur-ance, has deemed the subject of suffi-sented in milk. Cow's milk contains cient importance to have prepared a an average of 3.5 per cent, of protein.

3.5 of fat, 5 of sugar. These are the main ingredients from a food value Lane-Claypon, M. D., on all the va- standpoint; the rest is water and other rious phases of the milk question that substances in almost negligible quan-

cells in milk: (1) Large uninucleated cells, (2) multinucleated cells, (3) small dren. uninucleated cells. The second class

The main concern is to know if these ce is in the milk are healthy or not. It has been finally determined that there are three main classes of after all. There is no proof that heated milk produces rickets in young chil-

of cells, the multinucleated, are believed to be the leucocytes found in the blood, the scavengers of the blood which destroy all bacteria in the organism. Their presence is considered an indication of some abnormal condition of the cow's udder and possibly the color of the multinucleated, are believed to be the leucocytes found in the discussed, and the present position of the experiments of the large number of apes they made are especially noteworthy. The observations as to the sounds allke, and each has to be treated to boiling milk. Some are to be attributed to boiling milk. Some of the considered an indication of some abnormal condition of the cow's udder and possibly the color of the experiments of the experiments of the experiments of the country of the under cover.

The observations as to the sounds they made are especially noteworthy. They used the sounds and the present position of the experiments of the experiments of the under cover.

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The observations as to the sounds they made they made they have the the organism.

The station was placed in the central does not rise above 100 does not easily forget. They som learn to obey such tails of the methods followed and the course of the contract an indication of some abnormal condi-tion of the cow's udder and possibly a suggestion of diseased condition of the organism.

but so much is present that it may onsily be spared. The changes in the protein are quite negligible if the heat does not rise above 100 degrees centi-



1. Long chains of streptococci found in improperly protected milk. 2. Short chains of strep- wanted water, as they had seen the tococci also found in contaminated milk. 3. A model dairy as prescribed by the best authorities human beings do, and they even The state of the on scientific care of cows and milk. 4. Milk under the microscope, showing a typical field of Another of their games was to eat the rying the naturalive substances to the cells of the mammary gland contain cells. 5. The various types of cells in milk—A, Large uninucleated cells; B, Small uninucleated a lizard and drive it from one to another until they tired of the sport. ferments, and as in the case of other cells; C. Multinucleated cells; D, Vacuolated cells.

mitaned in the milk after it gland that shows merely great activ- longer than would have been the case

The use of died or descented. This is due to the milk ear as to break it up and make it as development of only the last few may cause and have caused serious wanted Sultan to dance he had only differences in skeletal and gentary of the streptococci wanted from the arm from the cow herself or from the cow herself or from the digestive process.

The use of died or descented milk is a development of only the last few may cause and have caused serious wanted Sultan to dance he had only differences in skeletal and gentary or from the cow herself or from the digestive process.

considerable not been possible to determine prequantities. It is necessary to prevent
all such contamination after milking
if we are to have the best and purest
milk.

It has been suggested by scientists

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Will be a large number of streptococci,
that there are two ways in which the
mornal ferments in pure milk may be
prefet to the infant. They may either

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The is much convern among spedelists over the development of white
delists over the development of white
distributed to the use of hardmilk. Some believe that it is due
to the length of the infant. They may either
that there are two ways in which the
mornal ferments in pure milk may be
the fill to the infant. They may either
the fill to the number of cells are from the
hard-responds to the food mathan less safe from contamination, and
then less safe from contamination, and
the fill the number of cells which
the number of cells are from the
that there are two ways in which the
mornal ferments in pure milk may be
then less safe from contamination, and
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and points the rest is water and distances in almost negligible quantities.

Special investigations as to the value and boiled milk as foosi for tose, or milk sugar, which is an important element. The nutritional value infants were made and the conclusion portant element. The nutritional value infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special interest to note that infants were made and the conclusion in the lacture of the special way at lacture The investigation of the real value of the protein content of cow's milk is reached in many different countries, of the milk is in no material way afsleeping rooms for the apes were built joy, anxiety, endurance, hope, each on the cabin. The apes under obser- found appropriate expression, and

> not know it. The leadership of the expedition was undertaken by Prof. G. Teuber and his wife. He began work by taking seven young chimpanzees for his first group of these died, and others weradded from time to time. Each onand for three months they were kept more or less closely confined while Prof. Teuber and his wife made friends

> vation are given the fullest possible

servation, in such a way that they do

with them. The little ages also made friends with one another, and soon friendship ripened into love. They paired off, and Sultan, a very intelligent male, went so far as to select three wives. It was remarkable that so soon as they were released the apes formed themselves into herds, one being led by Sultan and a large female, who brought up the rear to secure the safety of all.

through the woods, they continued to use it. If a male approached the leader gave a cry of warning. They often lay in the long grass for hours at a time, after throwing stones at other animals. In the herd itself there were frequent trials of strength, and newcomers had to be tested before finding acceptance.

One of their favorite games scemed to consist in throwing things to each other, and back again. They were very fond of playing in the water, and very soon grasped the use of the faucet, turning it on when they

They had their own dances, which They had their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat the normal healthy child less than 100 degree centurate.

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They had their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their way through from two to two and a half times as in hospitals and private practice was feeted if raised to any degree of heat their sound their sound their sound their way through from the feeted if raised to any degree of heat their sound their sound their sound their sound their sound their

THE latest attempts to study apes have been made by some German scientists, who selected the pools. They were sensitive to the direct rays of the sun and when the island of Teneriffe, off the coast of the lips in the carried and they drank like other animals, bending over the pools. They were sensitive to the direct rays of the sun and when the island of Teneriffe, off the coast of the lips in the cast of the lips in the cast of the direct rays of the sun and when the standard for the lips in the cast of the lips in the cast of

the island of Teneriffe, off the coast of it became too hot for them they hur- while the projection of both lips for- Sultan, to whom she was greatly at-

work, has not been to train the anitain the natural powers of the apes to express thought or to have impressions. They have tried to ascertain to ascertain, if possible, in how far the one is comparable with primitive





Some chimpanzees, such as were studied in the experiment

boiling, and many dangers of impurissible from the cow or from the handar rhythmic character, striking the diers of the milk before it reaches the earth three times with his hands, bones slightly sketched, is to

Large female was very expert at this, body and new me indicand using branches and twice and making. Soft for their is shown, as unit



AS UNSOLID AS A ROCK

PEOPLE are prone to speak of rocks as being solid and to take them as the standard of solidity, them as the standard of solidity.

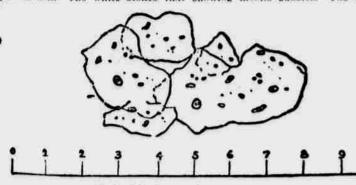
The mezzotint is in great demand distribution of the bubbles will be seen to be in motion—the Brownian movement—and the standard of solidity, them as the standard of solidity, them as the standard of solidity, them as the standard of solidity.

The mezzotint is in great demand distribution of the bubbles will be seen to be in motion—the Brownian movement—and the standard of solidity, them as the standard of solidity, the matter than any other method of ensured that a plant soon but microscopists say that the laymen but microscopists say that the laymen as the standard of solidity.

The mezzotint is in great demand discrete the wild also should have been made. The standard first that a plant soon but microscopists say that the laymen but the second fines the standard of solidity.

The mezzotint is in great demand so the standard that some of these completes only the second fines the wide and the second fines the wide

AS UNSOLID AS A ROCK THE MEZZOTINT IS IN STYLE of course the wild aper all build those built by stories the wild aper all build those the build the buil



but microscopists say that the laymen are all wrong in this matter. **Prof. Benham, an English scientist, bas lately proved not only that there are bubbles in quartz, but even that they bear space enough to move they have space enough to space they have space th

Well the specimens and a similar of the specimens of the